WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence selected from the group consisting of:

(a) a polynucleotide fragment of SEQ ID NO:2 or a polynucleotide fragment of the cDNA sequence included in ATCC Deposit No: XXXXX, which is hybridizable to SEQ ID NO:2;

(b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:3 or a polypeptide fragment encoded by the cDNA sequence included in ATCC Deposit No: XXXXX, which is hybridizable to SEQ ID NO:2;

(c) a polynucleotide encoding a polypeptide domain of SEQ ID NO:3 or a polypeptide domain encoded by the cDNA sequence included in ATCC Deposit No: XXXXX, which is hybridizable to SEQ ID NO:2;

(d) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:3 or a polypeptide epitope encoded by the cDNA sequence included in ATCC Deposit No: XXXXX, which is hybridizable to SEQ ID NO:2;

(e) a polynucleotide encoding a polypeptide of SEQ ID NO:3 or the cDNA sequence included in ATCC Deposit No: XXXXX, which is hybridizable to SEQ ID NO:2, having biological activity;

(f) a polynucleotide which is a variant of SEQ ID NO:2;

(g) a polynucleotide which is an allelic variant of SEQ ID NO:2;

(h) an isolated polynucleotide comprising nucleotides 251 to 1324 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 357 of SEQ ID NO:3 minus the start methionine;

(i) an isolated polynucleotide comprising nucleotides 254 to 1324 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 357 of SEQ ID NO:3 including the start codon;

(j) an isolated polynucleotide comprising nucleotides 521 to 565 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 90 to 104 of SEQ ID NO:3;

(k) an isolated polynucleotide comprising nucleotides 1055 to 1105 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 269 to 284 of SEQ ID NO:3;

(l) an isolated polynucleotide comprising nucleotides 1271 to 1312 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 340 to 353 of SEQ ID NO:3;

(m) an isolated polynucleotide comprising nucleotides 716 to 787 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 155 to 178 of SEQ ID NO:3;

(n) an isolated polynucleotide comprising nucleotides 947 to 997 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 232 to 248 of SEQ ID NO:3;

(o) an isolated polynucleotide comprising nucleotides 1106 to 1165 of SEQ ID NO:2, wherein said nucleotides encode a polypeptide corresponding to amino acids 285 to 304 of SEQ ID NO:3;

(p) a polynucleotide which represents the complimentary sequence (antisense) of SEQ ID NO:2; and

(q) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(p), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.

2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment consists of a nucleotide sequence encoding a human G-protein coupled receptor.

3. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

4. A recombinant host cell comprising the vector sequences of claim 3.

5. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:3 or the encoded sequence included in ATCC Deposit No: XXXXX;

(b) a polypeptide fragment of SEQ ID NO:3 or the encoded sequence included in ATCC Deposit No: XXXXX, having coupling activity;

(c) a polypeptide domain of SEQ ID NO:3 or the encoded sequence included in ATCC Deposit No: XXXXX;

(d) a polypeptide epitope of SEQ ID NO:3 or the encoded sequence included in ATCC Deposit No: XXXXX;

(e) a full length protein of SEQ ID NO:3 or the encoded sequence included in ATCC Deposit No: XXXXX;

(f) a polypeptide comprising amino acids 2 to 357 of SEQ ID NO:3, wherein said amino acids 2 to 357 comprising a polypeptide of SEQ ID NO:3 minus the start methionine;

(g) a polypeptide comprising amino acids 1 to 357 of SEQ ID NO:3;

(h) a polypeptide comprising amino acids 90 to 104 of SEQ ID NO:3;

(i) a polypeptide comprising amino acids 269 to 284 of SEQ ID NO:3;

(j) a polypeptide comprising amino acids 340 to 353 of SEQ ID NO:3;

(k) a polypeptide comprising amino acids 155 to 178 of SEQ ID NO:3;

(l) a polypeptide comprising amino acids 232 to 248 of SEQ ID NO:3; and

(m) a polypeptide comprising amino acids 285 to 304 of SEQ ID NO:3.

6. The isolated polypeptide of claim 5, wherein the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

7. An isolated antibody that binds specifically to the isolated polypeptide of claim 5.

8. A recombinant host cell that expresses the isolated polypeptide of claim 5.

9. A method of making an isolated polypeptide comprising:

(a) culturing the recombinant host cell of claim 8 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

10. The polypeptide produced by claim 9.

11. A method for preventing, treating, or ameliorating a medical condition, comprising the step of administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 5, or a modulator thereof.

12. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.

13. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or amount of expression of the polypeptide of claim 5 in a biological sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

14. An antisense compound 8 to 30 nucleotides in length that specifically hybridizes to a nucleic acid molecule encoding the human RAI-3 polypeptide having the sequence set forth in SEQ ID NO:3, wherein said antisense compound inhibits the expression of the human RAI-3 polypeptide.

15. The antisense compound according to Claim 14 wherein said antisense compound is selected from the group consisting of: SEQ ID NO:52, 53, 54, 55, 56, 57, 58, 59, 60, and 61.

16. A method of inhibiting the expression of the human RAI-3 polypeptide having the sequence set forth in SEQ ID NO:3 in human cells or tissues comprising contacting said cells or tissues in vitro with an antisense compound of Claim 15 so that expression of the RAI-3 polypeptide is inhibited.

17. A method for preventing, treating, or ameliorating a medical condition, comprising the step of administering to a mammalian subject a therapeutically effective amount of the antisense compound according to claim 15.

18. The antisense compound according to Claim 14, wherein said antisense compound is double stranded.

19. The antisense compound according to Claim 18, wherein said antisense compound is a DNA/RNA hybrid.

20. The antisense compound according to Claim 19 wherein said antisense compound is selected from the group consisting of: SEQ ID NO:94, and 95.

21. An isolated polynucleotide comprising one or more polymorphic alleles selected from the group consisting of: SEQ ID NO:18, 22, 23, 24, 25, 26, 27, 28, 29, 65, 66, 67, 68, 69, and 70.

22. The isolated polynucleotide comprising one or more polymorphic alleles of Claim 21 comprising a reference allele at one or more polymorphic loci.

23. The isolated polynucleotide comprising one or more polymorphic alleles of Claim 21 comprising an alternate allele at one or more polymorphic loci.

24. An isolated polypeptide comprising one or more polymorphic alleles selected from the group consisting of: SEQ ID NO:19, 8, 9, 13, 15, 17, 20, and 21.

25. The isolated polypeptide comprising one or more polymorphic alleles of Claim 24 comprising a reference allele at one or more polymorphic loci.

26. The isolated polypeptide comprising one or more polymorphic alleles of Claim 24 comprising an alternate allele at one or more polymorphic loci.

27. The method of diagnosing a pathological condition of claim 13 wherein the condition is a member of the group consisting of: a disorder related to aberrant G-protein coupled signaling; a disorder related to aberrant cell cycle regulation; pulmonary disorders, inflammatory lung disorders, COPD, the underlying symptoms of COPD, COPD-related disorders and/or conditions, autoimmune disorders, disorders related to hyperimmune activity, inflammatory conditions, disorders related to aberrant acute phase responses, hypercongenital conditions, birth defects, necrotic lesions, wounds, organ transplant rejection, conditions related to organ transplant rejection, renal diseases, ischemia-reperfusion injury, heart disorders, disorders related to aberrant signal transduction, proliferation disorders, cancers, such as lung cancer, stomach cancer, testicular cancer, breast cancer, etc., metastases, HIV infection, or HIV propagation in cells infected with other viruses, asthma, cystic fibrosis and pulmonary fibrosis, ulcerative colitis, cerebral infarct, myocardial infarct, diabetic nephropathy, allergic rhinitis, Crohn's disease, atherosclerosis, rheumatoid arthritis, inflammatory/auto-immune disorders outside of the lung in addition to COPD, glioblastoma, pulmonary small cell undifferentiated carcinoma, carcinoma of the breast, colon, lung, ovary, pancreas, prostate, non-Hodgkin's lymphoma, disorders associated with aberrant cell adhesion, disorders associated with aberrant I-CAM function and/or regulation, disorders associated with aberrant E-selectin function

and/or regulation, disorders associated with aberrant NF-κB function and/or regulation.

28. The method for preventing, treating, or ameliorating a medical condition of claim 11, wherein the medical condition is selected from the group consisting of: a disorder related to aberrant G-protein coupled signaling; a disorder related to aberrant cell cycle regulation; pulmonary disorders, inflammatory lung disorders, COPD, the underlying symptoms of COPD, COPD-related disorders and/or conditions, autoimmune disorders, disorders related to hyperimmune activity, inflammatory conditions, disorders related to aberrant acute phase responses, hypercongenital conditions, birth defects, necrotic lesions, wounds, organ transplant rejection, conditions related to organ transplant rejection, renal diseases, ischemia-reperfusion injury, heart disorders, disorders related to aberrant signal transduction, proliferation disorders, cancers, such as lung cancer, stomach cancer, testicular cancer, breast cancer, etc., metastases, HIV infection, or HIV propagation in cells infected with other viruses, asthma, cystic fibrosis and pulmonary fibrosis, ulcerative colitis, cerebral infarct, myocardial infarct, diabetic nephropathy, allergic rhinitis, Crohn's disease, atherosclerosis, rheumatoid arthritis, inflammatory/auto-immune disorders outside of the lung in addition to COPD, glioblastoma, pulmonary small cell undifferentiated carcinoma, carcinoma of the breast, colon, lung, ovary, pancreas, prostate, non-Hodgkin's lymphoma, disorders associated with aberrant cell adhesion, disorders associated with aberrant I-CAM function and/or regulation, disorders associated with aberrant E-selectin function and/or regulation, disorders associated with aberrant NF-κB function and/or regulation.

29. A method of screening for candidate compounds capable of modulating the activity of a G-protein coupled receptor polypeptide, comprising:

(a) contacting a test compound with a cell or tissue comprising an expression vector capable of expressing a polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:3, under conditions in which said polypeptide is expressed; and

(b) selecting as candidate modulating compounds those test compounds that modulate activity of the G-protein coupled receptor polypeptide.

30. The method according to claim 29 wherein said cells comprise a vector comprising the coding sequence of the beta lactamase gene under the control of NFAT response elements.

31. The method according to claim 31 wherein said cells further comprise a vector comprising the coding sequence of G alpha 15 under conditions wherein G alpha 15 is expressed.

32. The method according to claim 31 wherein said cells express the G-protein coupled receptor polypeptide at low levels relative to an internal control polypeptide.

33. The method according to claim 26 wherein said cells express the G-protein coupled receptor polypeptide at high levels relative to an internal control polypeptide.

34. A method of predicting the likelihood that an individual will be diagnosed as being at risk of developing COPD, a COPD-like disorder, or one or more of the underlying symptoms of COPD, upon exposure to cigarette smoke, wherein said method comprises the steps of: a.) determining the level of RAI-3 expression relative to a control; and b.) associating said level with the likelihood of being at risk of developing COPD, a COPD-like disorder, or one or more of the underlying symptoms of COPD, upon exposure to cigarette smoke.